1995 Base

Definition

The 1995 Base condition represents current system infrastructure and actual operations as defined in Table 1.

Simulation of 1995 Base in SFWMM v3.7

Modeling assumptions

- Lake Okeechobee operated according to Run 25 schedule.
- Uses Test 7 Phase 1 Experimental Water Deliveries to operate S12's and S-333.
- Water Conservation areas operated according to current schedules (not rain driven).
- There are constraints at Tamiami Trail
- L67 extension is still in place
- C111 project not in place

The 1995 Base used in the Modified Water Deliveries Project is the same as that used in the Lower East Coast Regional Water Supply Plan modeling using the South Florida Water Management Model (SFWMMv3.7). It is slightly different from the Central and Southern Florida, Comprehensive Review Study (Restudy) 1995 Base which used SFWMMv3.5. A memorandum giving details of differences between SFWMMv3.5 and SFWMMv3.7 is available. Some of the assumptions in the 1995 Base modeling using SFWMMv3.7 that are different from those used in the Restudy are summarized below.

Model assumptions in SFWMMv3.7 that differ from SFWMMv3.5

- Operations of the S-12's: Simulation of the S-12 structures was improved by allowing separate operation of each individual S-12's. The fraction of the total S-12 target flow that is to be delivered through S-12A to S-12D can be specified for each month of the year and for three flow regimes. Fractions used for the 1995 base were 10%, 20%, 30%, and 40% for S12A, S12B, S12C, and S12D, respectively.
- Constraints on S-333 flow: Simulation of the G-3273 and L-29 stage constraints on S-333 discharge were improved by revising the computational methods used to restrict and cut-off S-333 flows. A special version of the SFWMM calibration/validation was developed to fine-tune the simulation of these important operational constraints.
- Taylor Slough Rainfall Plan: Target stages in L-31W were revised to use the current Taylor Slough Rainfall formula that was implemented as part of Test 7 – Phase 1.
- Operations of S-174 and S-332 were fine-tuned to be consistent with those described in the EA.
- Simulation of the WCA-3A Regulation schedule was modified. The S-12's now do not pass more than 45% of the target discharge when the average WCA-3A stage is in zone C.

Table 1. Definition of the 1995 base Condition

	Existing (1995) Condition
Climate	The 1965 to 1995 climatic record is used for evaluations of the Existing (1995) Condition. Rainfall and potential evapotranspiration are the key climatic inputs. The same climatic record is also used for the evaluation of the Future (2020) Condition and will be used in the evaluation of plan alternatives.
Sea Level	For the Existing (1995) Condition, sea level data from six long-term USGS stations are used to generate a historic record to use as sea level boundary conditions for the 1965 to 1995 evaluation period.
Population and Socio-Economic Conditions	The Existing (1995) Condition reflects actual 1995 population and socio-economic conditions. Population and socio-economic conditions enter into and affect the Existing (1995) Condition analysis largely through their impact on water demands.
Land Use for Lower East Coast and Lake Okeechobee Service Areas	• For the portions of the Coastal Basins covered by the Water Preserve Area Land Suitability Analysis, land use data updated through 1994 were available and were used for the analysis of the Existing (1995) Condition. For the remaining portions of the Coastal Basins the latest data available were the 1988 land use data developed for the Draft Lower East Coast Regional Water Supply Plan. • Land use in the Everglades Agricultural Area represents the estimated conditions in 1990, as estimated for the Draft Lower East Coast Regional Water Supply Plan. • Land use conditions in the remainder of the Lake Okeechobee Service Area are accounted for through the evaluations of demands.
Natural Area Land Cover (Vegetation)	Recently updated information on vegetation classes and their spatial distribution prepared by the District are used for the natural areas. The updated information includes improved classification of wetland land cover types and generally reflect conditions in the 1990 to 1995 period.
Urban and Agricultural Water Demands	• For the analysis of the Existing (1995) Condition, historical 1995 data on public water supply wellfield pumpages are used. The same public water supply pumpages are used for each of the 31 years of the analysis. • Irrigation demands in the Coastal Basins were based on land use and the daily climatic data for the 31 years of the analysis. • Everglades Agricultural Area irrigation demands were based on historic use patterns and daily climatic data for the thirty-one years of the analysis. • Demands on Lake Okeechobee by the remainder of the Lake Okeechobee Service Area (other than the Everglades Agricultural Area) including those of the Caloosahatchee and St. Lucie Canal Basins were based on historical records adjusted to reflect growth in demands over time due to development in these basins. • The St. Lucie Canal Basin demands include the existing Florida Power and Light reservoir at Indiantown. • The Upper East Coast rainfall runoff-relationship is the same as the runoff-relationship developed during the Indian River Lagoon Feasibility Study. • St Lucie Canal Basin demands associated with the existing (1995) land use include the demand associated with the current Florida Power and Light reservoir at Indiantown.
Physical Facilities & Operations - Lake Okeechobee & Lake Okeechobee Service Area	Existing (1995) water management system and practices including: • Lake Okeechobee Regulation Schedule Run-25 with: Lake Okeechobee regulatory discharges to Water Conservation Areas first, then to Caloosahatchee & St. Lucie if insufficient conveyance capacity exists through the Everglades Agricultural Area. Also Lake Okeechobee regulatory discharge to Water Conservation Areas allowed if Water Conservation Areas are below their regulation schedules. • Lake Okeechobee Supply Side management policy for Lake Okeechobee Service Area water restriction cutbacks • Interim Action Plan for reduced stormwater backpumping to Lake Okeechobee from Everglades Agricultural Area • No water supply backpumping to Lake Okeechobee from the Everglades Agricultural Area • Everglades Agricultural Area Best Management Practices • Everglades Agricultural Area Best Management Practices assumed to reduce runoff from Everglades Agricultural Area by ~18% per year • Everglades Agricultural Area Best Management Practices assumed to not reduce irrigation requirements from Lake Okeechobee • Replacement Water Deliveries per Everglades Forever Act(EFA)/SFWMD Rule • Historical Kissimmee River inflows to Lake Okeechobee.
Physical Facilities &	Existing (1995) water management system and practices including: • No net outflow from Water Conservation Areas (WCA) if water level is less than minimum

	Existing (1995) Condition
Operations – WCAs, Holey Land and Rotenberger WMAs	operating criteria in canals of Loxahatchee National Wildlife Refuge (WCA-1): 14 ft., WCA-2A: 10.5ft., WCA-3A: 7.5 ft. If water is available from Lake Okeechobee, it may be passed through the WCAs to LECSA. • No regulatory releases to tide from Water Conservation Areas • C&SF Interim Regulation Schedule for the Loxahatchee National Wildlife Refuge (WCA-1) • Current WCA-2A & 3A regulation schedules • The topography in WCA-3B is consistent with the most recent USGS survey (USGS Report, December 1995) with the appropriate datum conversion from 1988 NAVD to 1929 NGVD.
Physical facilities & Operations – Everglades National Park	Existing (1995) water management system and practices including: • Water deliveries to Everglades National Park are based on the current Experimental Rainfall Delivery Plan for flows to Shark River Slough vis S-12's and S-333 • Test 7 Phase 1 Operations of Experimental Program of Water Deliveries to Everglades National Park
Physical facilities & Operations – Lower East Coast Service Area	Existing (1995) water management system and practices including: • Existing C&SF system and operating rules in effect in 1995 • Existing secondary drainage/water supply system • Existing public water supply wellfields • Location of Northwest Dade Lake Belt's existing mines included in Land Use information.
Physical facilities & Operations – Western Basins and Big Cypress	Existing (1995) water management system and practices including: • Estimated historical inflows from Western basins
Region-wide water management and related operations	• The analysis of the Existing (1995) Condition reflects the existing water shortage policies as reflected in South Florida Water Management District rule 40E-21. The impacts of declarations of water shortages on utility water use reflect assumptions contained in the Draft Lower East Coast Regional Water Supply Plan for the 2010 base case. These are that Phase 1 restrictions result in a 10% decrease in water use, while Phase 2 results in a 25% decrease, Phase 3 a 40% decrease and Phase 4 a 55% decrease. Restrictions are applied to the LECSA(s) affected locally by low ground water levels. • Implementation of supply side management in the Lake Okeechobee Service Area to mimic existing District practices as detailed in the District publication Lake Okeechobee Supply-side Management Plan, September 1991.